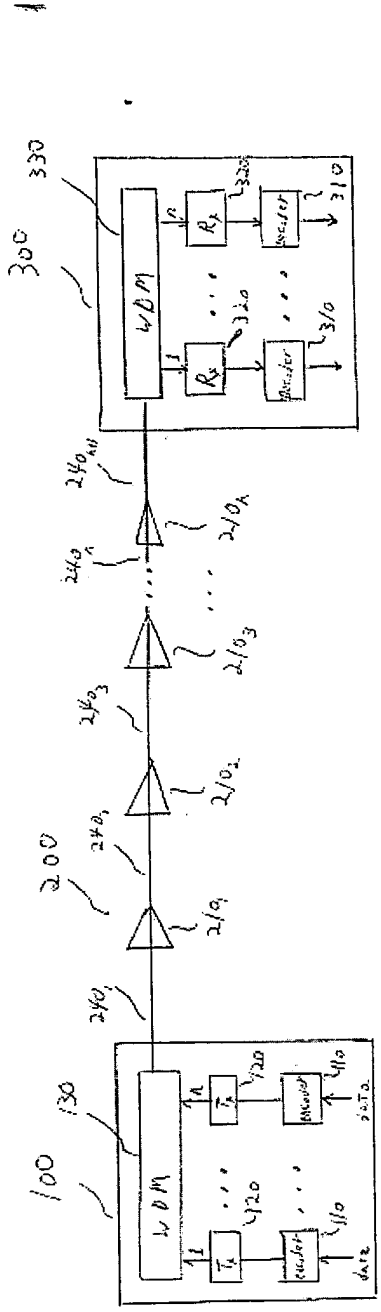


Fig. 1

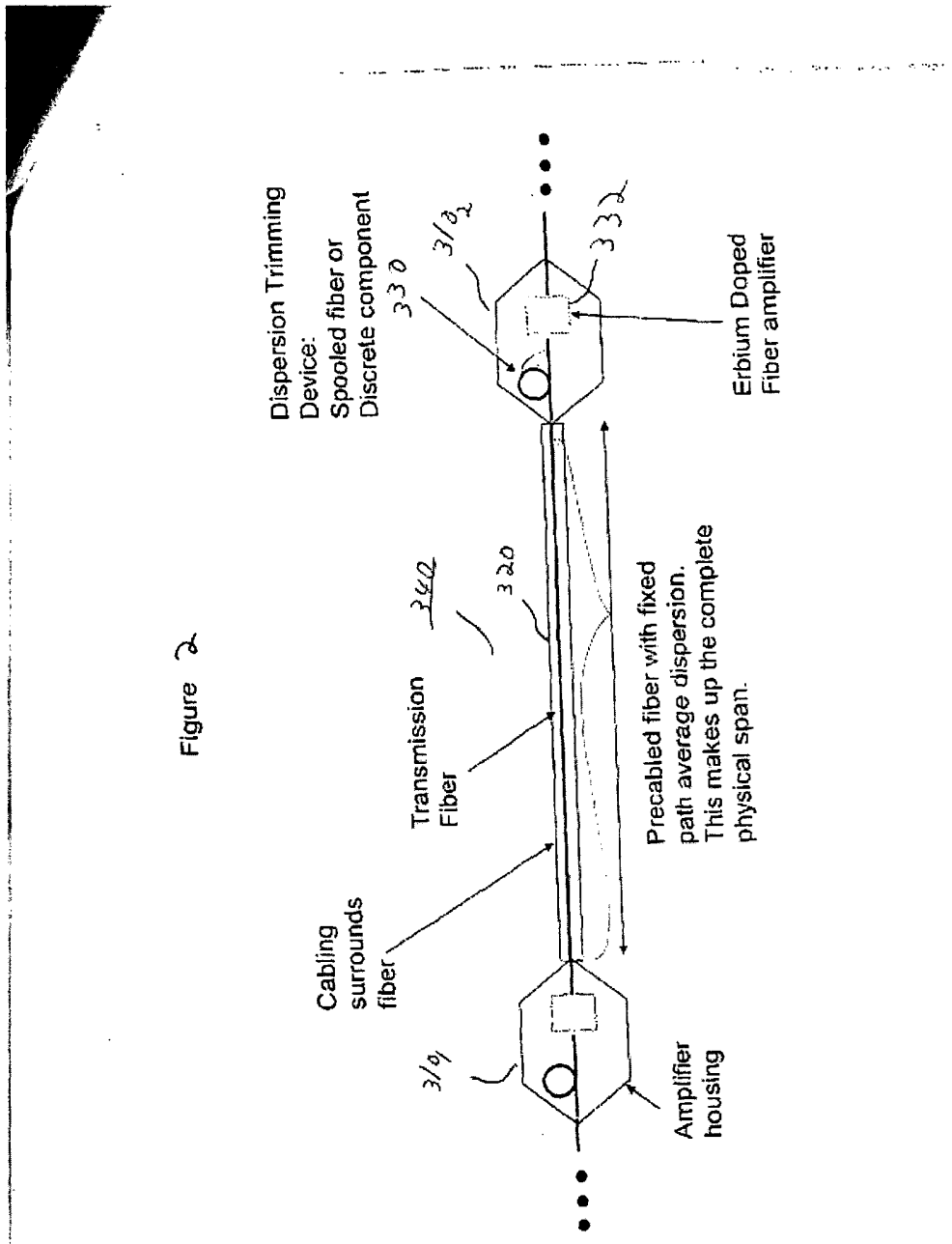
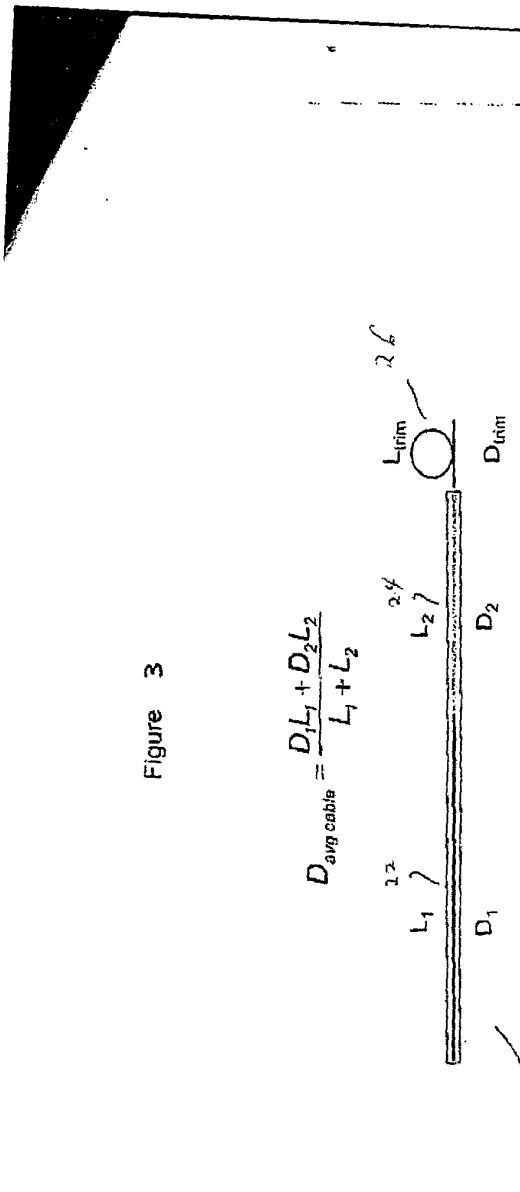

Dispersion Trimming Device: Spooled fiber or Discrete component
330
Erbium Doped Fiber amplifier
Transmission Fiber
320
Precabled fiber with fixed path average dispersion. This makes up the complete physical span.
Cabling surrounds fiber
Amplifier housing

Figure 2

Figure 3


$D_{avg\ cable} = \frac{D_1L_1 + D_2L_2}{L_1 + L_2}$
L_1
D_1
L_2
D_2
L_{trim}
D_{trim}
20
22
24
26
$D_{average\ total} = \frac{D_1L_1 + D_2L_2 + D_{trim}L_{trim}}{L_1 + L_2 + L_{trim}}$ or $\frac{D_1L_1 + D_2L_2}{L_1 + L_2} + D_{trim}$
Where D_{trim} is the group delay (ps/nm) of a discrete device
Note: L_2 can be 0

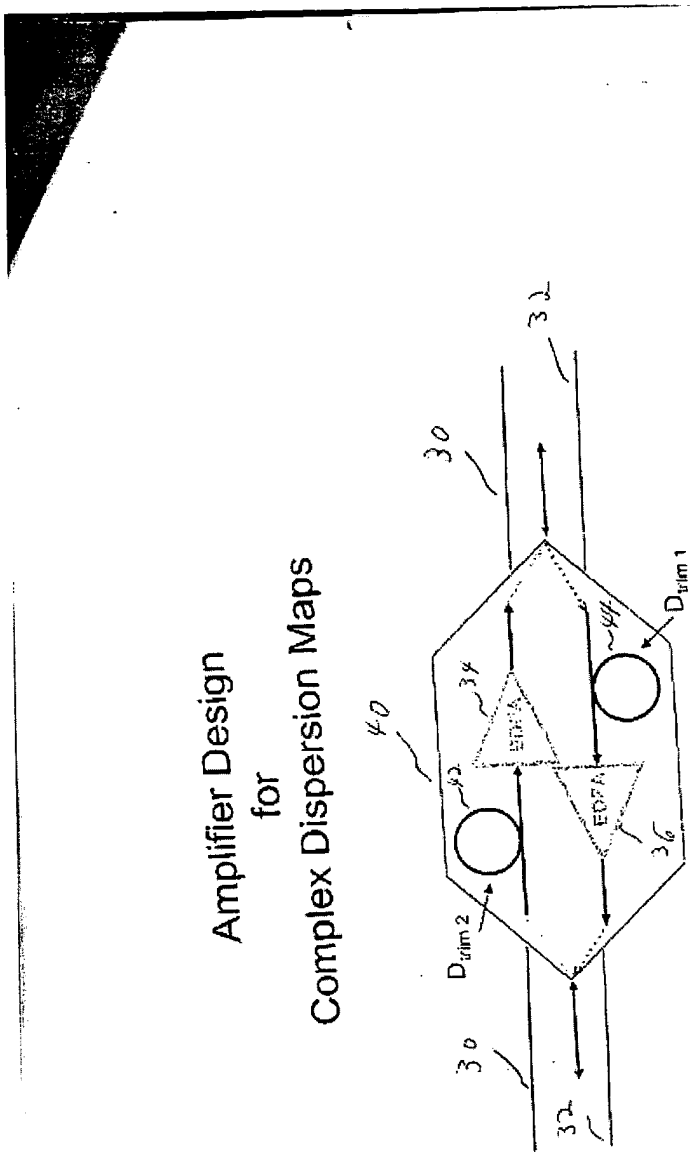

Amplifier Design
for
Complex Dispersion Maps
30
32
40
42
34
36
EDFA
EDFA
$D_{trim\ 1}$
$D_{trim\ 2}$

Figure 4